

T-300

Table Top Bagger

Operation Guide, Ver 1
Installation, Setup and Operation Guide



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Acknowledgments

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APPI warrants to the Purchaser that the equipment is free from defects in workmanship or material under normal use and service. During the warranty period, APPI agrees to repair or replace, at its sole option, without charge to Purchaser, any defective component part of the equipment. To obtain service, Purchaser must return the equipment or component to APPI or an authorized APPI distributor or service representative in an adequate container for shipping. Any shipping charges, insurance, or other fees must be paid by Purchaser and all risk for the equipment shall remain with Purchaser until such time as APPI takes receipt of the equipment. Upon receipt, APPI, the authorized distributor or service representative will promptly repair or replace the defective component and then return the equipment or component to Purchaser, shipping charges, insurance and additional fees prepaid. APPI may use reconditioned or like new parts or units, at its sole option, when repairing any component or equipment. Repaired products shall carry the same amount of outstanding warranty as from original purchase. Any claim under the warranty must include a dated proof of delivery. In any event, APPI's liability for defective components or equipment is limited to repairing or replacing the components.

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Equipment Integration to other Equipment: APPI assumes no responsibility for the integration of its products to other products or within a system unless APPI performs the integration, testing and provides the results of the tests to the purchaser in writing. Furthermore, APPI assumes no responsibility for bag sizing whether suggested or recommended.

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Chapter 1, Introduction

Welcome

Overview

Special Features

System Integration

Options Available

Using This Manual

Warranty Registration

1.1 Welcome

Now that you've decided to upgrade your packaging facilities with the T-300 Table Top Bagger from Advanced Poly-Packaging, Inc., we thank you for selecting our equipment, materials, and service. Where labor reduction and fast changeover is important, the T-300 uses Advanced Poly-Bags (pre-opened bags on rolls), manufactured by Advanced Poly-Packaging, Inc. The T-300 can package various industrial, medical, molded and food products. With a wide range of bag sizes (2" x 3" (standard frame only) to 11" x 16") and mil thickness (1 mil to 4 mil), we hope the T-300/T-375 will meet all of your bagging needs. This manual will function as one manual for both machines, if you have purchased the T-300 model, your bagger includes a printer and certain sections of this manual will only pertain to the T-300.

1.2 Overview

The T-300 Table Top Bagger is designed to lower your packaging costs with high speeds, versatility, reliability, and simplicity.

High Speeds - Indexes, opens, seals, and tears off a bag at high speeds. Actual packaging speed is dependent on the bag size, equipment options, product characteristics and method of loading.

Reliability - Crafted from the highest quality components and materials to withstand the most rigorous manufacturing environment; sturdy mounts, and rugged frame guarantee long life and usefulness with minimal maintenance.

Simplicity - A user-friendly menu-driven touch screen program allows operators to setup the bag, options and auxiliary equipment, save the settings in memory, and recall those settings for repeat runs.

1.3 Special Features

Energy Conservation & Component Saver - To extend its life and conserve energy in your plant, the T-300 is programmed to sequentially shut components down when not in use for extended periods. Electric current to the heater bar will discontinue and place the T-300 in the stop mode during a preset period of nonuse. Air flow can also be shut off preserving compressed air. Finally, a screen saver is provided to extend the life of the touch screen.

Predetermined Counter - Preset the T-300 to stop after a predetermined number of bags have been packaged. Set the quantity of finished bags to complete a work order or fill a shipping container. Once the work order is complete or the container is full, the T-300 stops to alert the operator to begin the next work order or to push aside the box to begin filling another. Pressing Reset on the screen resets the counter and starts the bagging operation with minimum delay.

Totalizing Counter - Reset this counter at the beginning of each shift or day to record packaging production over a period of time.

Maintenance Counter/Chart - Periodically check this counter (total machine cycles) to determine preventive maintenance / component inspection intervals for inspection / maintenance criteria and intervals.

Continuous Strip Option - Leave bags connected in an "endless" strip or a predetermined number of strips of sealed bags.

Twin Seal Option - Change the sequence of operation to place a second seal on each bag, parallel to the first, to improve the integrity of the bag.

Communications Port - Allows for auxiliary communications.

Compartment seal option - After product “1” is inserted in the bag and sealed, product “2” can be inserted into the same bag. The bag is then sealed a second time above product “2” to provide a two compartment bag. This optional sequence of operation is offered to prevent product 1 from damaging product 2 or vice versa.

CF-10 Counting Funnel - Counts parts as they pass through the funnel for automatic cycle operation. A variety of optical frame or single beam sensors are available depending on the product being detected.

Antijam Device - During the loading and sealing operation, this device will detect obstructions and automatically reverse the pressure bar and discontinue the cycle operation.

1.4 System Integration

The T-300 is specifically designed for hand loading. However, limited automatic operations may be available.

1.5 Available Options

Although the T-300 is equipped with "built-in" options described above, various options can easily be added for special purpose packaging. The following options may be purchased from Advanced Poly-Packaging, Inc.

Funnels: The T-300 comes with a universal adjustable funnel, however various size funnels can be purchased. APPI provides free product evaluations to determine proper funnel sizes and configurations.

1.6 Using this Manual – Typographical Conventions

The following manual conventions are frequently used to assist in understanding important information, alerting the operator of potentially dangerous or damaging practices, and the normal functions of the T-300/T-375 Bagger / Bagger/Printer.

text Normal text

<ENTER> <> Used to show Touch Screen keys

Italics Used for emphasis

CAUTION: Warning messages: To avoid physical harm, damage to equipment or damage to the product. Be sure to read these messages carefully

1.7 Warranty Registration

(This section must be completed and returned to Advanced Poly Packaging, Inc. to register the T-300 for Warranty Protection)

T-300

(Serial Number located on the back panel)

Company Name and Address	Contact Names(s) / Title(s) / Phone Number

Please fax or mail this page to:

Stuart Baker
Advanced Poly-Packaging, Inc.
1331 Emmitt Road
Akron, OH 44306
USA

Fax # (USA) 330-785-4010

Or email the information above to: stuart@advancedpoly.com

Chapter 2, Getting Started

Installation Procedures

Air and Power Requirements

Assembly Instructions

Height Adjustment

Air & Power Hookup

Bag Threading

T-375 Ribbon Threading

Cycle Operation

Tension

Note on Adjustments

2. Getting Started

This chapter describes in detail procedures to receive and setup the T-300, including uncrating, environmental, air and power requirements, assembly, and height adjustments. Additionally, this chapter describes how to turn on power to the T-300 and properly thread bags through the machine.

2.1 Installation Procedures

The T-300 is transported as a single unit in a custom carton designed to protect the machine during shipment. It is shipped completely assembled.

Unpacking: After removing the stretch wrapping, remove the carton from the skid, open the top and cut all four corners using a safety knife. Then, transport the T-300 to the operating location using a cart.

CAUTION: Do not attempt to lift the T-300 from the carton without first cutting all sides open. Also, to prevent injury, do not attempt to lift the machine without assistance.

Operating Environment/Location: The T-300 should be placed in an area free of excessive heat, moisture, dirt, and dust. Operating room temperature should range from 50 to 100 degrees Fahrenheit. Choose an operating location considering traffic flow, availability of bag supplies and supply of product to and from the bagger.

2.2 Air & Power Requirements

Power Requirements: Provision must be made for 110 VAC, 60 Hz line current with ground (220V/50hz) may have been supplied based on electrical requirements). Full Load Current for T-300/T-375: 10 AMPS.

CAUTION: A qualified electrician should ensure that the T-300 power outlet is properly grounded, voltages are as required and amperage capacity is sufficient. Note: APPI recommends a dedicated 20 Amp circuit for the T-300.

Air Requirements: At least 2 CFM free air is required, regulated to 60 PSI. *Note: Air should be dry and oil-free.*

Note: Running the T-300 at a higher PSI setting than 80 PSI will cause excessive wear and may cause damage to components on the machine or parts being packaged. The antijam function may also be adversely affected.

2.3 Assembly / Minor Adjustments

The T-300 may require some minor adjustment to the funnel/chute. Two knobs, located on either side of the chute U bracket, can be loosened and pushed in or out to allow for chute angle adjustment. The chute should be positioned approximately 1/2" from the top of the bag when the bag stops in the loading position. Adjust as required and tighten the knobs.

CAUTION: Seal bar should not come in contact with the funnel during sealing. Raise the funnel to avoid contact. To avoid injury, do not operate the T-300 without a funnel, guard or covers properly positioned.

CAUTION: APPI offers a variety of funnels and chutes. You may need to add guarding to prevent operators from reaching in, around or under the guard or funnels.

CAUTION: To avoid injury, do not reach underneath guards while the machine is plugged in

2.4 Air & Power Hookup

This section describes in detail how to hook up air and power and the air and power requirements.

Note: A qualified electrician should ensure power outlets are the required 110 VAC and properly grounded before hooking up the power.

The air supply should be fed to the T-300 with 3/8 ID flexible tubing; this tubing affixes to the coupler adapter (quick disconnect not provided). Connect the air to the regulator by holding the regulator firmly in one hand and pushing the air line connector on the male regulator connector. After connecting air, the regulator should be adjusted so the gauge reads 60 PSI. Insert the T-300 power cord into a 110VAC, 60Hz, grounded power outlet.

2.5 Main Power

The main power switch is located on the rear panel. Press the switch to ON position so that the Red main power light is illuminated. When the power is in the ON position, the Touch Screen will power up displaying the Introduction Screen. The Main menu is accessed from this screen. *Note: If the Touch Screen does not power up, see Chapter 7, Trouble- Shooting.*

2.6 Bag Threading

Remove the top cover, unlatch, and raise the upper roller assembly. Then, remove the roll shaft from the rear of the machine. Loosen one of the knobs located on the chuck which secures the roll into position. Mount the roll of bags, centered onto the bag roll shaft, and secure the bag roll into position with the chuck. Make sure roll is going in proper direction with the loose web of bags falling over the rear of the roll. Thread web under the idler roll and then over the steel driven roller.

The bag web should be centered under air nozzle. Finally, lower the upper roller assembly, lock the rollers into position using the handle and replace the top cover. See Fig. 2-1 for the T-300 for the T-375.

Caution: Roller "Fingers" may be sharp. To avoid injury when reaching into the T-300/T-375, ensure that you do not come in contact with the roller "fingers."

Note: The Roller Guides are for fine adjustments only, after proper tracking has been achieved. If not tracking properly, the web of bags may "ride" up the side of the guides causing the bags to fold over.

2.8 Cycle Operation of the T-300

If all prior installation procedures have been performed properly, the T-300 should be in its operating location with air and power connected. All guards, funnels and covers should be in position and securely fastened.

Locate the foot switch (if you wish to run the machine with a foot switch) and plug the foot switch in the rear foot switch connector. Press the foot switch to index one bag through the "nip" rollers. One bag should index, blow open and stop between the pressure bar and the heater bar. You may also use the guard switch or simply press the MANL CYCLE button on the touch screen. If the T-300 is not up to temperature, the machine will not cycle unless the <Run> button is toggled to the <Setup> position. If the web of bags breaks prematurely, further adjustments will be required. See Chapter 7, Trouble shooting. If one bag indexed through the machine, press the foot switch a few times more. Each previously indexed bag should detach completely from the web of bags. If the bag is not indexing and/or stopping or not tearing off properly, see Chapter 3 for Settings Adjustment or Chapter 7, Troubleshooting.

Note: Web of bags may track right or left for a few feet until "settled" on the web path. The roll of bags or the roller guide may require readjustments or realignment after the first few feet of bags are indexed.

Note: If bags were delivered with the T-300/T-375 or the size of the bags were known to APPI, the T-300/T-375 may be ready to run. Therefore, few changes to BAG SET UP may be required.

2.9 Increasing Tension

To improve bag alignment, increased web tension may be required. You can increase tension by loosening one of the chucks that hold the roll in position on the shaft and pressing it inwards, toward the center of the roll of bags. Then, tighten while pressing inward. This increases drag on the roll of bags, increasing web tension. Also, if the bags pay off too much when the web advances, increasing drag will prevent bags from paying off excess film.

2.10 Note on Adjustments to the T-300

Upon receipt, it is not unusual for the T-300 to be out of alignment due to shipping and excessive handling. Unless physically damaged, the bagger will function properly after minor adjustments are accomplished. Read Chapter 4 for information on adjustments of the T-300.

Chapter 3, Touch Screen Operation

Touch Screen Part Names

Specifications

Contrast Adjustment

Touch Screen Program

3. Touch Screen Operation

This section describes in detail, the identification, operation, and adjustments of the Touch Screen Program.

3.1 Touch Screen Part Names - Back Panel (See diagram 3.1.1)

IOP Cable to Touch Screen / PLC Program Port

PLC Wiring / Power

Battery Cover / Battery Location

DIP Switch Setting

Caution: Do not attempt to reprogram the PLC or Touch Screen. Doing so may cause an unsafe operating condition. Doing so will also void the warranty. Additionally, do not change the DIP switch settings.

3.2 Touch Screen Specifications/Features

Specifications	
Screen, Resolution	3" 128 x 64 pixels
LCD	Green, Red and Orange
Memory	384 KB
Communication	RS232C
Touch Key Res.	Free, Analog
Languages	English, Spanish, French, German, Italian, Japanese, Chinese, Korean
Dimension	110 x 72 x 28 mm (W x H x D)
Back Light	No Backlight LED is used
Power Supply	5Vdc, 0.20A

3.3 Touch Screen Program

The Touch Screen Program is a "user-friendly" menu-driven setup and operation program. Popup windows are incorporated for quick and easy setting adjustments. Each time a setting is changed, the settings are saved so that if power is lost, the "job" will be recalled automatically without the need for reprogramming. Moving around through the program, entering menu levels, and entering setup options are easily and quickly achieved by just one touch of the screen to set the options you choose. A general color scheme has been used for consistency with operation:

Green: Normal Operation

Red: Stop functions, warning messages or off positions.

Orange: Information Pause

3.4 Introductory Screen

When the T-300 is turned on, an Introductory screen is displayed. See Fig. 3-1. The introductory screen is a welcome screen and has a button to take you to the Main Menu. When powered up, the machine will be in the Stop mode.

Press the Contact Info button to display the manufacturers information. See Fig. 3-2.

Press the Timers Button to set a timer to turn off the heater bar after machine is not running. This conserves energy. And to set the temperature range of the machine. See Fig. 3-3

Press the Operation button to set the feed distance and Index speeds.

FeedDist: Feed distance setting allows you to ignore horizontal perforations which could cause the bagger to stop at the wrong location. Since the perf sensor is "looking" for a perforation, a second perforation could be detected. If the horizontal perforation is 1" from the bag perforation, set this value to 2", for example. The default setting is 1".

IndexDlay: An Index Delay timer is provided to allow the bag just sealed to drop before the next bag is indexed. If the bag below does not move out of the way fast enough, the bag feeding out could hit it, causing it not to open or feed properly. If the bag feeding contacts the bag below, increase the value of this timer.

Press the Maintenance button to display the program version installed on the machine See Fig. 3-3.

Press the PLC I/O button to display input and output statuses.

Press the Main Menu button to access the normal operations of the See Fig. 3-2.

3.5 Main Menu

The Main Menu is initially accessed from the Introductory Screen, this screen allows the operator to go to most other screen locations. See Fig. 3-2

On most screens, there are three toggle buttons and a MC (Manual Cycle) button.

Start / Stop: Toggle button controls operation mode; mode which enables the T-300/T-375 to cycle. The machine cannot cycle if in the Stop mode.

Manual/Auto: Toggle button to enter Automatic (paced rate) or Auxiliary Cycle mode.

3.7 Settings Menus

The Settings Menu is used to change settings to cause the bag to seal and index properly. Bag thickness, length, width, and product characteristics affect these settings. Once set, the operator may save the bag settings along with options settings and auxiliary settings for later recall. All settings will be entered numerically on a keypad. See Fig. 3-4.

To adjust any of the following settings, touch the number below the text description. A number keypad will be displayed. To change the setting, press the <CLR> (Clear Value) button, then press the number (decimal point first, if less than 1) and then press <Enter>. To clear an incorrectly pressed value, press the highlighted <CLR> button and retype the correct value. Pressing <Enter> will return you to the Bag Setup Screen. After changing a setting, test cycle the bagger several times to ensure the setting produces the desired results.

Fill Time: In the AUTO mode operation, the Fill Time setting adjusts the time the operator has to load the bag before the seal operation begins. In this “paced operation”, increasing the fill time decreases the cycles per minute, allowing more time for filling.

In the MANL mode of operation, fill time starts when the guard switch, foot switch or <MC> button is pressed. To start the cycle operation immediately without a delay, change the setting to 0.00.

Caution! To avoid personal injury, do not operate the T-300 AUTO mode when funnels or guards are removed. Funnels should not be removed unless a light curtain or palm buttons or other approved safety device is installed. Guards should never be removed in an operation status.

Air Pulse: Displays, in seconds, the amount of time that a burst of air will last, *initially* blowing the bag open. Wider bags and heavier gauge bags require a longer burst of air to initially open the bag. Narrower and thinner gauge bags require less air to initially open the bag. To adjust the value, press the <Air Pulse> button from the Bag Setup Menu to display the number keypad. Press the numbers on the keypad followed by the <Enter> button to return to the Bag Setup Menu. Additionally, to increase the *volume* of air from the air pulse tubes, turn the Air Pulse valve counter-clockwise; turning the valve clockwise will decrease the volume of air. The Valves to adjust the air pulse air volume and blower air volume are located on the right lower side of the seal frame assembly.

Note: The volume of air set should be the minimum amount and duration required to consistently open the bag.

Blow Off: To decrease the possibility of bags sticking to the PTFE Anti-Stick Sealing Sheet, a blow-off tube is provided as a standard feature. The blower tube is located in the center, immediately below the seal bar

3.7 Seal Settings Menus

Seal Time: Displays, in seconds, the time the pressure (rubber) bar will remain touching the surface of the bag for proper sealing. Sometimes referred to as “dwell time”, seal time is one of three critical components to obtain a strong seal (other critical factors include seal temperature and seal pressure). A typical value is .5 seconds for 2 or 3 mil films.

Seal Point: Displays in inches the seal point position measured from the top perforation. The proper positioning of the seal on the bag varies due to bag size and product characteristics. Wider bags generally, require greater sealing area than do narrower bags. Additionally, bags packaged with bulky products require greater sealing area than do bags packaged with thinner products. A typical setting for a mid-size bag (5 x 7") would be .7" A typical setting for a large bag would be 1.5".

Seal Temperature: When the power is ON, the heater bar element receives electrical current. The PLC pulses electrical current to the element until the temperature setting is reached. An amber indicator lamp illuminates on the Bag Setup Screen while the element is receiving current. The longer the light is illuminating, the longer the "pulse" of current and the further away from the temperature setting. If the temperature of the heater bar is not within a set range around the set point, "Waiting" will be flashed on the top left screen.

Note on Seal Quality: Quality seals are achieved by making adjustments to SEAL TIME, SEAL TEMP., SEAL POINT and by having the proper seal pressure.

3.11 Options Available Menu

Options that can be added to the T-300 at the factory will be accessed from an Options Screen. If options were not installed at the factory, then N/A (Not available) will be displayed to the left of each options button. Otherwise, the button will display ON or OFF. Contact APPI Sales Support for additional options, programming, or operations for automatic infeed operations. See Fig. 3-7.

Note: If options are added in the field, a pass code is required to Enable use of the option. Contact APPI for a pass code. Options which have been purchased separately must be installed by APPI or by qualified maintenance personnel.

The following sections describe how to setup optional equipment. If your T-300/T-375 is not equipped with these options, please disregard these sections.

3.15 CF-10 Counting Funnel

A Photo optic and preset Counting option not included in the standard T-300/T-375 package and must be purchased separately. This option is useful and will automatically cycle the bagger when a preset number of parts have fallen through the funnel.

Photo optic eyes may vary depending on your product, so parts should be sent to APPI for testing to determine the correct components. Parts must be separated to be counted accurately through the eye. If two parts fall at the same time, they may be counted as one. If loading automatically with minimal distance between parts, an accumulating funnel or method of diverting may be required for separation between the last part in the batch count and first part in the next batch. Contact APPI Sales Support for additional options, programming, or operations for automatic infeed operations.

To turn ON the option, press the Mode toggle button. Press the <Reset> button to reset the count to the preset value.

Parts length test: With the option ON, go to the Parts Length Test Screen, press the <Reset> button. Toggle the T-300/T-375 to the Stop mode using the Toggle button located at the top left side of the screen. Then, drop parts individually through the photo sensor / funnel. You will notice that the Min and Max values will change as you drop parts through the eye. If the parts will be fed automatically, parts should pass through the eye as they would if feeding automatically.

Min Setting: The Minimum Setting is used to filter scrap. If through testing the min value detected was .2, setting the value to .1 would cause parts that are .1 or less not to be counted. If you set the Min. Setting too close to the actual minimum test value however, these parts may not be counted causing over counts. Setting the Minimum Setting to Zero will cause all parts to be counted.

Maximum Setting: The Max Setting is used to count parts connected or parts falling through the eye together (overlapped) as two parts. If when testing the parts length, the Max value was determined to be .5, you could set the Max Setting to .8. Then, if two parts overlapped go through the eye with a setting a .9, they would be counted as two parts. However, if you set the Max Setting too close to the Max Value,

one part may be counted as two, causing undercounts. To disable this 2-count function, set the value to zero. A help screen is provided to further explain Min and Max Settings.

3.17 CS-10 Compartment Seal

Special programming is required to seal the bag twice with compartments within the same bag. This option is not included in the standard T-300/T-375 package and must be purchased separately. For instance, it may be necessary to segregate a sharper object (screw) from a plastic component (mounting plate) to avoid the screw damaging the plastic part.

Both seal points can be adjusted by the operator to increase or decrease the size of each compartment. However, the larger object should be placed into the bag first.

First set Seal Point 1 by pressing the <Seal Point 1> button and typing in the value on the number keypad. Adjust the first seal point until the desired location is achieved. Then, turn the option ON by toggling ON the ON/OFF button. Adjust the second seal point by pressing <Seal Point 2> and entering a value in the number keypad. Adjust the value of the second seal point until the desired position is achieved. Each seal time may be adjusted if you wish the Trim Seal after the second seal has been placed on the bag.

3.20 Counters Screen

The T-300/T-375 is equipped with three internal counters as a standard feature. To access the counter screen press the <Counter> button from the Main Menu. See Fig. 3-20.

Continuous Strip Counter: This option allows you to seal bags in a strip, without separating them at the perforation. If you set this counter value to 10, for instance, you will have a strip of 10 bags connected. The bagger will then reverse to separate the 11th bag.

Press the <Reset> button to reset the counter to the set value. To disable the option, set the value to zero.

Note: If you don't want the bags separated ever, you can either set the counter value to very large number or simply change the Reverse setting to zero in the Bag Setup Menu.

Totalizing Counter: To track production, use the Totalizing Counter to count cycle operations of the T-300/T-375. Press the <Reset> button to reset the counter to zero. This counter value is also displayed on the Operation Screen.

Predetermining Counter: To halt production after a preset number of cycle operations, use the Predetermining Counter. When the final count has been reached, a message screen will be displayed.

Set the value by pressing the <Set> button and then type the value on the number keypad followed by the <Enter> button. To disable the Predetermining Counter set the value to "0".

3.22 Tech Assist

Press this button to return to the Intro screen

3.21 Job Save / Recall

The T-300/T-375 is able to store 42 machine settings, called *jobs*, including BAG SETTINGS and OPTIONS SETTINGS. See Fig. 3-21.

Each time a setting is changed on the T-300/T-375, the settings are immediately saved in memory so that if power is lost, the T-300/T-375 will power on with the job that was running before power was lost.

To Save a job to a memory location, first enter the Recipe (memory location), from 1 through 42 and enter your Part Number (up to 6 digits). Then, press the <Save> button. You will be prompted to confirm the save function. See Fig. 3-23.

To Recall a Recipe that has already been saved to a memory location, enter the Recipe Number and then press the Settings button. You can then review the settings before pressing the <Load> button.

If you don't know the Recipe Number, enter your Part Number, then press the Part # Search button. You can then press the Settings button to view and load your settings. See Fig. 3-22.

3.22 Auxiliary Screen

The T-300/T-375 Touch Screen Program is preprogrammed to accept closed contact inputs so that the two or more pieces of equipment "talk" to each. Occasionally, reprogramming will be necessary to interface auxiliary (infeed) equipment that is not manufacturer by APPI. Special cabling may also be required. See Fig. 3-24.

Once connected and with both systems running independently, turn the Auxiliary Signal ON by pressing the ON/OFF toggle button from the Auxiliary Screen. An output time delay is provided which delays the bagger from sealing after the auxiliary infeed signal has cycled and signaled the bagger to seal. To adjust the delay timer, press the <Output Delay> button and enter the value, in seconds, on the number keypad.

When the Auxiliary setup procedures are complete, Press the <ON> button on the Auxiliary Screen. Then toggle the T-300/T-375 from <MANL> to <AUTO> by pressing the <MANL/AUTO> toggle button. This will place T-300/T-375 in the Automatic / Auxiliary mode.

3.23 Technical Assistance

Technical Assistance screen provides manufacturer information, printer status, factory settings adjustments and functions testing and troubleshooting. It also displays program version for PLC controller and touch screen. See Fig. 3-25.

Note: Before entering the Technical Assistance Screen, you must enter a Level 1 pass code.

3.24 Pass Code Setup Screen

Advanced Poly-Packaging, Inc. (APPI) has included a pass code function in all touch screen equipment to prevent operators from changing settings.

There are two pass code levels described as follows:

1. Level 1: This is the highest-level pass code which prevents operators from accessing the Technical Assistance functions of the machine. The default pass code, when shipped from the factory, is 1001.
2. Level 2: This level pass code, when the pass code function is enabled, prevents the operator from accessing settings screens that affect the operation of the equipment. See Fig. 3-26.

Pass codes prevent unauthorized individuals from tampering with settings. When equipment is shipped, APPI uses the following codes which should be changed prior to putting the T-300/T-375 into operation.

Factory Set Pass Codes:

1. Level 1 pass code: 1001
2. Level 2 pass code: 1002

To enable the pass code function, press the <Tech Assist> button from the Main Menu. Type in the Level 1 pass code (1001 by default from APPI). Press <Bagger PassC> Then press ON to toggle the pass code function ON. If you change the pass codes, ensure that these codes are written down.

Once the pass code function is enabled, the operator will have a programmed amount of time (time-out time) to make changes. Once this time has elapsed, the Operation Screen will automatically be displayed. This time can be changed by accessing the Bagger Pass Code setup screen.

If you misplace or forget the pass codes, contact APPI Service Dept for assistance. APPI will prove a

“factory code” so that the current pass codes can be displayed.

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3.26 PLC Info

The PLC I/O screen is provided for maintenance personnel to determine the status of the PLC and review the mode of Outputs and Inputs. PLC I/O screen(s) are also used to assist APPI Service Technicians, working with your Maintenance Personnel to troubleshoot the T-300/T-375 in the field. See Figures 3-29 through 3-30.

To determine the function of each Input / Output, press the Help button to display a brief description of each input or output LED. The PLC I/O screen also provide the run Hours and Cycles counters. These counters cannot be reset by the operator.

3.27 Factory Settings Screen: Default Settings

These settings are additional bagger settings which should only be set by qualified technicians or by the factory. See Fig. 3-31.

Heat Off: The bagger is programmed to shut off the heater bar if the machine is idle for this amount of time. The default setting is 60 minutes. To decrease this time, press the <Heat Off> button, enter the new time (in minutes) and press the enter key.

TempRng: The machine cannot cycle unless the heater bar temperature is within this range of the set temperature. If the heater bar temperature is within this set range, READY will be displayed in the top left corner of the screen. Otherwise, WAITING will be displayed. However, you can test cycle the machine while it is coming up to temperature by toggling to the SETUP mode.

FeedDist: Feed distance setting allows you to ignore horizontal perforations which could cause the bagger to stop at the wrong location. Since the perf sensor is "looking" for a perforation, a second perforation could be detected. If the horizontal perforation is 1" from the bag perforation, set this value to 2", for example. The default setting is 1".

SealDelay: A Seal Delay timer is provided to allow air to escape before the seal bar actuates. To decrease the volume of air remaining in the bag after sealing, increase this timer.

IndexDelay: An Index Delay timer is provided to allow the bag just sealed to drop before the next bag is indexed. If the bag below does not move out of the way fast enough, the bag feeding out could hit it, causing it not to open or feed properly. If the bag feeding contacts the bag below, increase the value of this timer.

3.28 Factory Settings Screen: Zero Perf, Zero Seal, Max Seal Program

A zero perf function is provided to register the seal point and provide a reference position for the seal point setting.

To determine if the seal point is registered, set the Seal Point setting to the lowest setting, and press the MC button or press the guard switch. The bag should move so that the perforation is approx. 1/8" from the center of the heater bar. If the bag perforation is not approx. 1/8" from the perforation, perform the following procedure carefully. If you perform these steps out of order, the bagger will not function properly.

Step 1: Toggle the bagger to Stop, then back to Run.

Step 2: Press the <Zero Perf> button. Bag should feed slowly and stop so that the perforation behind the pinch rollers is located very close to the perforation sensor.

Step 3: Press and hold the <Jog+> button until the perforation come through the pinch rollers and feeds exactly centered on the heater bar.

Step 4: Press the <Zero Seal> button. Bag should now reverse the distance of the Reverse Setting.

Step 5: (for the T-300 only) Press and hold the <Jog - > button until the perforation that was just centered on the heater bar reverses to the pinch roller fingers.

Step 5: (for the T-375 only) Press and hold the <Jog - > button until the perforation is centered under the blue rubber roller but is still pinched between the rollers.

Step 6: Press the <Max Seal> button.

Note: If you perform these steps incorrectly, repeat from Step 1.

When complete, test the Seal Point setting by entering .1" and pressing the MC button. The bag should feed so that the perforation is approx. 1/8" from the center of the heater bar.

Also, since the procedure also set the maximum reverse value, enter 6" in the Max Reverse setting. If equipped with a Standard Frame bagger, this setting will be approx. 1.8" when the Seal Point Setting is .1". On a Drop Frame machine, the maximum setting will be approx. 2.7" when the Seal Point Setting is .1". Press the MC button and ensure that the bag does not reverse to far, to drop inside the machine.

3.31 Information Screens / Message Screens

If an error occurs the Touchscreen program will notify the operator with a red Warning Signal. For specific problems, detailed messages will appear with solutions to fix a specific problem. See Fig. 3-40 through Fig. 3-53.

Some messages provide functional messages that describe errors or the status of equipment and some provide instructions for operators to follow to bring the bagger back online. To reset a message screen, clear the condition first (if required) and then touch the screen.

Chapter 4, Settings & Adjustments

Machine Adjustments

Component Replacement

4.1 Machine Adjustments

Periodically, the T-300 / T-375 will require readjustment or realignment of components to ensure proper operation. Adjustments may be required after transportation, excessive handling, or due to normal wear and tear.

Caution: Machine adjustments, electrical troubleshooting and component replacement should be performed by qualified maintenance technicians, familiar with safety practices including but not limited to equipment lock-out/tag-out, voltages, and pneumatics. If you are not familiar with the equipment or have not received training on the T-300 / T-375, you should consult with APPI technical support before attempting adjustments or repairs.

4.2 Tracking and Alignment Adjustments

Bags that are not tracking properly can cause product to spill out of the chute or funnel onto the floor. Tracking problems can also cause the thermally printed information to be out of the proper location. To avoid spillage or printing problems, machine adjustments to correct the tracking and alignment of the web of bags may be required.

However, before considering adjustment, check that there is sufficient tension on the web of bags. When feeding or stopping, the bag roll should not spin freely or feed excess film. The web of bags should not come in contact with the bottom plate inside the machine. To increase web tension, loosen the knob that holds the roll and chucks in position, push the roll to the right, into the plastic core plug on the bag roll and tighten the knob. When pressing the left chuck to the right, the right chuck must not move. See Fig 4-1.

Unwind the bags by hand and check the tension. Then, cycle the machine several times to ensure that the bags do not break prematurely (too much tension) or does not free wheel (too little tension). For narrower or shorter bags, proper tension is more critical.

4.3 Compression (NIP) Roller Adjustment

The drive roll compression is the force that exists between the two feed rolls (rubber covered grooved roll and grooved steel roll). Not enough drive roll compression will prevent the bags from *tearing off* after each sealing operation. Too much drive roll compression will cause extra wear on the drive roll and the motor.

Turn the power switch to the OFF position and unplug the power cord. Remove the top cover. The compression adjustment is located on the latch assembly. See Fig. 4-2.

Compression adjustment is a three-step process. First, the upper and lower roller are adjusted to make the lower roller parallel to the upper roller. Then, the upper roller is adjusted (lowered) for proper compression. Finally, the stop bolts are checked to ensure that the latch mechanism is not overextending. Step 1: Parallel adjustment.

On both the left panel and right panel, loosen the two locking bolts on the upper block of the compression tension assembly. Loosen the nut on the adjustment screw. With the inner frame locked in the UP position, lower the lower roller by turning the adjustment screws counter-clock wise until the lower roller is parallel to the upper roller and leaving 1/16" gap between the rollers. Turn the adjustment screw clockwise alternatively, keeping the lower roller parallel with the upper roller until the rollers come in contact across the width of the rollers. Slightly lower the inner frame and raise again to ensure that when raised again, the rollers touch simultaneously. Then "snug" the upper block bolts and recheck the alignment.

Note (TIP): A light source (lamp) positioned to the rear of the T-300 / T-375 showing light in the gap of the rollers will assist in judging whether the upper and lower roller are parallel.

Step 2: Compression Adjustment

With the rollers slightly touching and parallel, turn each adjustment coupler approximately 1/2 turn clockwise. Then test the compression by putting a bag between the rollers. Attempt to pull the bag between the rollers. If the bag pulls out easily, turn the compression adjustment coupler another 1/2 turn clockwise. Continue this adjustment until the bag is slightly difficult to pull out of the rollers. Turning the coupler equally on both sides keeps the rollers parallel. Raise and lower the upper roller assembly to ensure that it latches properly without having requiring pressure.

Caution: Over-tightening of the compression adjustment screws may cause damage to the rubber roller or the motor.

When you are satisfied with the compression, slightly raise the upper roller assembly, and slowly lower it until it almost touches the upper roller. If the gap is consistent across the width of the rollers and it appears parallel, lock the inner frame upward and re-tighten the two locking bolts that hold the coupler in position.

Step 3: Stop Bolt Adjustment

If the compression is sufficient when lowering the upper roller assembly, but then the compression is lost due to over extending, the latch mechanism, the stop screws must be adjusted. Loosen the locking nuts that hold the stop bolts into position. Then, turn the stop bolts 1/2 turn each. Then lower the roller assembly and check the compression when the coupler is against the stop bolts.

When in the rollers and latch mechanism has been properly adjusted, the upper latch assembly will lower and lock into position when the latch handle is pressed all the way downward. Additionally, the compression will be sufficient for the bag to separate, but not too tight to cause the motor to stall or "chatter".

4.4 Idler roller Guides

Two plastic web guides, are located on the rear idler roller. These guides are used for *fine* adjustment of tracking. Once the web is tracking within +/- 1/8" left to right, the plastic web guides can be used to further assist tracking. Hold the upper roller in place while turning and sliding the plastic guides close to the bags without touching the bags.

NOTE: If the bags are not tracking properly, the plastic guides could cause the bag web to turn or fold over. If this occurs, slide the guides further away from the web and make adjustments to correct tracking issues.

4.5 Heater Bar Adjustment

The pressure bar, when actuated by the seal cylinder, is forced against the front gripper plate. The pressure must be great enough to grip the bag so that the bag does not move when the rollers reverse. If the bag slips through the pressure bar and gripper plate, the bag may not be separated or the bag not sealed properly.

Check for free movement of the spring-loaded gripper plate: The power off and the when the heat has dissipated from the heater bar, press inward on the front gripper plate with sufficient force to move the gripper plate inward on both sides. Then, press in on one side only, one side at a time, and ensure that the gripper plate springs back outward when released.

If the gripper plate does not spring back, adjustments are required.

With power turned off air removed, remove four screws holding the face / gripper plate to the front plate. Pull the assembly out carefully as not to disconnect or damage wiring. Disconnect the thermocouple wire at the connector and the heater connectors and pull out the assembly.

Inspect the springs for breaks or damage and replace as required. Inspect for debris and clean as required. Press the gripper plate inward evenly, then on one end, then the other, searching for the specific location causing the binding. Two blocks slide in a housing. Ensure that the blocks are not binding in the housing. If this is where the binding is occurring, loosen the screws and reposition the block. Then tighten and test for free movement. Clean all components and reassemble.

With the assembly complete reassembled and mounted in the machine, attach air, and power and turn on the unit.

4.6 Pressure Bar Alignment / Cylinders Speed Adjustment

The pressure bar must come in evenly, so as to contact the gripper plate at the same time all the way across. If one side of the pressure bar contacts the gripper plate prematurely, the antijam may activate, the bag may not be sealed or excessive wear or machine damage could occur.

Check for free movement of the pressure bar: Turn the power to the OFF position and unplug the power cord. Remove the air line from the regulator and remove the top cover. Once the air is removed, the pressure bar can freely be pushed toward the front plate. If the pressure bar binds, adjustments will be required. Binding may be caused by: 1) cylinder rods not being parallel to each other, 2) failing seal cylinders or 3) bent seal cylinder rods.

To test for parallelism, with the power off and air removed, loosen the screws holding the pressure bar onto the seal cylinder rods. With the screws loose, press in the pressure bar and check for binding. If the cylinders do not bind with the screws loose, then the cylinders were most likely not parallel. Tighten the screws while the pressure bar is touching the gripper plate. Then pull the pressure bar back out checking for binding. If there is no further binding, attach air and power on the unit and test cycle by pressing the foot switch or guard switch. If binding still occurs, then the cylinders themselves must be aligned to make them parallel to each other. This is accomplished by placing shimming material between the cylinder mounting brackets and the side walls. Contact APPI technical support before proceeding.

To test for failing or bent seal cylinders, with power off and air removed, remove the pressure bar entirely. Then, push each cylinder rod inward individually. If the cylinder rod binds when not attached to the pressure bar, then the cylinder must be replaced.

If the cylinders are not binding, check for proper pressure bar movement inward and outward: Watch the operation of pressure bar for several cycles to ensure that the pressure bar contacts the gripper plate at the same time all the way across. If one side of the pressure bar contacts the gripper plate prematurely, the seal cylinder speed must be adjusted.

Two "speed controls" operate the speed of each cylinder's in and out motion that brings the pressure bar against the front plate (gripper plate). Increasing the speed of the pressure will increase production. But, if the pressure bar moves in or out too fast causing the pressure bar to "bang", excessive wear will occur. Pressure Bar IN Speed Adjustment: The adjustment knob to the rear of the unit controls the speed of the pressure bar INWARD (towards the front plate). To decrease the speed of the pressure bar INWARD, turn the knob counterclockwise. To increase the speed of the pressure bar INWARD, turn the knob clockwise.

Pressure Bar OUT Speed Adjustment: The adjustment knob toward the front of the unit controls the speed of the pressure bar OUTWARD (away from the front plate). To increase the speed of the pressure bar OUTWARD, turn the knob clockwise. To decrease the speed of the pressure bar OUTWARD, turn the knob (A) counterclockwise.

Adjust the speed of the pressure bar so that it moves in and out rapidly, in a fluid manner, without causing the pressure bar to "bang" when moving in or out.

4.7 Rubber Strip Replacement

Through normal use, the rubber strip will wear causing seal quality problems. The rubber will also wear prematurely if contacting the product during the seal operation.

When the wear affects the seal quality or causes the bags not to separate in the gripper mechanism, replace the rubber strip by following these procedures:

1. Remove air from the unit, turn the T-300 / T-375 power “OFF” and unplug the power cord.
2. Remove the worn rubber pad by pulling from the end corner of the rubber strip. Once started, the rubber will easily slide out from the metal pressure strip housing.
3. Clean out the metal slot with alcohol and a cloth or brush.
4. Slide the new extruded rubber strip into the metal housing slot starting at one end and continuing to work the rubber along the length of the slot. When into position, the rubber strip should be loose in the slot.

Caution! Metal housing for rubber strip has sharp corners and sharp edges. When rubber is removed, carefully clean slot with a thick cloth avoiding contact with your fingers or hands.

If bags stick to the new rubber, PTFE Anti-Stick tape can be added to the center of the rubber strip.

4.8 PTFE Anti-Stick Sheet Spool Advancement

The anti-stick material will wear with continued use and prematurely tear if contacting the product when sealing. If the PTFE Anti-Stick Sheet wears or tears affecting the seals; the sheet can be advanced to bring new surface in the seal area.

To advance the sheet, insert a small flathead (common) screwdriver into the bottom 1/4” hole located on the right-side panel of the unit. When you feel the screwdriver enter into the slot of the rod, turn the screwdriver counterclockwise to advance new material into position. See Figure 4-3.

After turning new material into position, turn the rod clockwise slightly so that there is very little tension on the sheet.

Note: If the sheet is too tight (too much tension), the material may tear during the seal operation.

4.9 PTFE Anti-Stick Sheet Replacement

When the sheet has been exhausted, it will become loose from the upper rod and will require replacement. To replace the sheet, follow these procedures:

1. Remove air from the unit, turn the T-300 power “OFF” and unplug the power cord.
2. Remove the top cover and lift the funnel assembly upwards
3. Remove four screws from the guard assembly and remove the Lexan guard.
4. Allow the sealer mechanism to cool for at least 30 minutes.
6. Pull one side (right or left side) of the seal assembly out from the front plate. Since the seal assembly is tight, some maneuvering may be required to remove the assembly from the machine. To avoid damage to components or wiring, do not force the assembly.
7. Disconnect all wire connectors and remove the complete assembly.
8. Remove gripper plate from heater bar assembly.
9. Unwind and remove Anti-Stick Sheet from upper and lower rods.
9. Peel backing off of one side of new sheet.
10. Attach new PTFE Anti-Stick sheet to the top rod.
11. Roll new sheet on to top rod.
12. Attach to bottom rod.
13. Reverse steps 1-8 for re-assembly.

4.10 Heater Cartridge Replacement

Since the heater element is a normal wear item, it will require replacement when burned out. Heater element and heater bar life span may be increased by timely adjustment of PTFE Anti-Stick Sheet. If the heater bar does not come to temperature fully or does not heat whatsoever, the entire heater bar must be replaced.

Follow these procedures to replace the element:

1. Remove air from the unit, turn the T-300 power “OFF” and unplug the power cord.
2. Remove four screws from the guard assembly and remove the Lexan guard.
3. Allow the sealer mechanism to cool for at least 30 minutes.
4. Remove the two screws located on the left and right side of the seal bar which hold the seal assembly.
5. Pull one side (right or left side) of the seal assembly out from the front plate. Since the seal assembly is tight, some maneuvering may be required to remove the assembly from the machine. To avoid damage to components or wiring, do not force the assembly.
6. Disconnect all wire connectors and remove the complete assembly.
7. Remove gripper plate from heater bar assembly.
8. Unwind and remove PTFE Anti-Stick Sheet from upper and lower rods.
9. Remove screws that hold the support bar cap on both sides.
10. Remove screws from the brace assembly on each side.
11. Pull seal bar away from brace.
12. Cut braided wires so that old heater bar can be removed.
13. Insert new crimp pins into new Molex connectors.
14. Reverse steps 1-11 for re-assembly
15. Reconnect the wire connectors and install the heater bar ensuring that the full rod is positioned at the top. Secure seal assembly with two screws and mount guard.

4.11 Description of Antijam Circuit

The antijam mechanism decreases the possibility of damage to the T-300 if product or other objects are in the seal area. The operation of the antijam circuit should be tested prior to production on a daily basis. Although the antijam unit may also prevent or decrease the opportunity for injuries during the sealing or heating operation, the antijam is not designed as a safety device. If not adjusted properly, damage may result from obstructions in the seal area or personal injury may result from fingers or hands being in the seal area when sealing.

If properly adjusted, a jam is detected when: 1) the rubber pressure strip does not contact the PTFE Anti-Stick Sheet at one or both sides of the gripper plate or 2) the gripper plate is pressed prior to the rubber pressure strip contacting the gripper plate.

4.12 Antijam Adjustments / Testing

The antijam mechanism consists of: 1) two cylinder magnetic switches which detects the cylinder position and 2) two photo sensors that detect the spring-loaded gripper plate. If the antijam circuit is not functioning properly, follow these procedures to test and/or adjust the antijam components:

Test 1: With air applied and the power on, position an object over 1/4” in thickness on the far-left side of the seal bar with the object in contact with the gripper plate, but not pressing in the gripper plate. Then press the foot switch. If the pressure bar retracts, the antijam circuit is working properly.

If the pressure bar does not retract when an obstruction of at least 1/4” in thickness is present anywhere in the seal area, follow these procedures to adjust and test the circuit:

1. Remove air from the unit, turn the T-300 power “OFF” and unplug the power cord.
2. Remove the top (stainless) cover and side (painted) cover.
3. Locate the two magnetic sensors which are clamped on the end of each seal bar cylinder.
4. Reach under the Lexan guard and manually push the pressure bar inward until rubber strip slightly *touches* the gripper plate evenly across the pressure bar but does not press in the springs.
5. Turn the power ON and press the Tech Assist button, then PLC IO button on the touch screen to

display the Inputs/Outputs. Locate X2 and X4 input LEDs on the touch screen.

6. By manually pulling out and pushing in the pressure bar, keeping it parallel to the PTFE Anti-Stick Sheet, X2 and X4 should come ON at the same time before the spring-loaded gripper plate moves. It is important that the inputs come on at the same time and that when they do, the pressure bar rubber is close to the gripper plate.

7. To adjust the sensitivity of the sensors, loosen the retaining claim by turning the screw located on the black magnetic sensor, positioned at the end of the cylinders. Then, slide the sensor along the cylinder to achieve the correct input results.

8. Test the circuit by manually pushing in the pressure bar. Again, the magnetic cylinder sensors in the proper position if the X2 and X4 inputs come on at the same time and when they come on, the pressure bar rubber is near the gripper plate.

9. Turn of the power OFF, replace all covers, apply air and power and test cycle the machine, further testing the anti-jam circuit.

Test 2: With air applied and the power on, position a stiff object of at least 1/4" in thickness on the far left side of the seal bar. Then, push the spring-loaded gripper plate with the object so that it moves inward. While pressing in the spring-loaded gripper plate, X7 input should light up, and the screen Will display "Please check left heat bar sensor" See Fig. 3-25, repeat same test for right side sensor looking for X6 input and "please check right side heat bar sensor"

If pushing the gripper plate in on either side fails to light its respective input, follow the following procedure.

1. Remove air from the unit, turn the T-300 power "OFF" and unplug the power cord and wait until the heater bar is fully cooled down.

2. Remove the top (stainless) cover and side (painted) cover.

3. Locate and inspect the two photo sensor boards and ensure that the two rectangular black and white photo components are flat and parallel to each other. If not, carefully reposition the sensors.

4. Turn the power ON and locate the two photo sensor printed circuit boards. You should notice that a threaded rod extends through the photo eyes. The threaded rods move inward and outward with the movement of the spring-loaded gripper plate. Additionally, when the threaded rod enters the photo sensor, X7 (left sensor input) and X6 (right sensor input) are lit on the PLC.

5. Turn the power ON and test the X7 and X6 inputs by pressing inward on the spring-loaded gripper plate. You will notice also, that the touch screen displays a message for both the left and right photo sensors.

6. When the spring-loaded gripper plate is not pressed (home position), the X6 and X7 inputs should be off and the touch screen should display a normal operation. However, when the spring-loaded gripper plate is pressed slightly inward; the inputs should come on and the Warning message displayed. You will notice that the Warning message is displayed when the rod passes through the photo sensors.

7. To adjust the sensitivity of the spring loaded "U" channel, loosen the nut on the left rod. With the spring loaded gripper plate in the HOME position, turn the threaded rod with a flat head screwdriver, so that the spring-loaded gripper plate when slightly pressed, causes the X7 to come on.

4.13 Replace Thermocouple Wire

A thermocouple wire, brazed to a ring terminal and secured to the bottom of the heater bar, detects the amount of heat the heater bar is emitting. The thermocouple wire is considered a normal wear item and will infrequently fail, requiring replacement.

The thermocouple should be replaced when excessive fluctuations occurs or incorrect temperature is displayed in the Bag Setup menu. The thermocouple should also be replaced when a visual inspection reveals frayed insulation or broken wire. If the above conditions are met, the thermocouple is bad and the current to the heater bar has been turned OFF.

To replace the thermocouple wire, turn the main power to the OFF position, unplug the power cord and disconnect the air line.

Remove the front plate and PTFE Anti-Stick Sheet assembly. Remove the screws which hold the ring terminal and the jacketed wire clamp. Disconnect the connector and remove the wire. Reverse these steps to replace the wire.

CAUTION: To avoid stretching or breaking the wire during heater cylinder extension, ensure that the wire is looped and free to bend during heater bar movement.

Replace the PTFE Anti-Stick Sheet assembly and front plate.

4.14 Print Head Replacement

Print head instructions will be included with each print head. Otherwise, contact APPI tech support for further instructions.

Chapter 5, Parts

Mechanical Drawings

Parts Listing / Bill of Materials

Chapter 6, Preventive Maintenance & Scheduled Maintenance

PM Checklist

Schedule Maintenance (CHART)

6.1 Preventive Maintenance & Scheduled Maintenance

To extend the life of the T-300/T-375 qualified maintenance personnel must perform all required maintenance tasks. Failure to perform scheduled and preventive maintenance may cause excessive wear to components and will void the warranty. For the purpose of this manual, preventive maintenance (PM) tasks are considered periodic tasks which should be performed on a daily, weekly, or monthly basis.

Scheduled maintenance tasks are performed when the T-300/T-375 Maintenance Chart Number changes to a higher number. Scheduled maintenance tasks (CHART items) are performed dependent upon the number of machine cycles and therefore are not considered "periodic" tasks.

Legend for Preventive Maintenance Checklist

D	Daily
W	Weekly
M	Monthly

6.2 Preventive Maintenance Checklist

ITEM	DESCRIPTION	PERIOD
Filter / Air regulator	Drain water from filter	D
Air regulator	Adjust pressure to 60 PSI	D
Antijam device	Check operation, adjust as needed (Chapter 4.10)	D
Drive rollers	Clean with alcohol	D
Perforation sensor	Clean sensor assembly with alcohol	D
Platen print roller	Inspect for nicks or cuts, clean with alcohol	D
Print head	Clean with alcohol (also after each ribbon change)	D
Micron filter / Venturi	Inspect for contamination of filter, replace as needed Inspect for blockage / air restriction	W
Wiring / Connectors	Inspect for loose wiring / connectors, tighten as needed	M
Air lines / Valves / Cylinders	Inspect for loose air lines, listen for leaks, tighten, or replace poly tubing as needed	M
Compartments / Covers	Remove all covers, clean, and blow out compartments with compressed air to Remove dust and dirt	M
Compression (drive rollers)	Inspect to ensure parallel w/ each other (bag tracking)	M
Drive belt	Inspect for wear / fraying, replace if needed	M
Drive Belt (print head assembly)	Inspect for wear, looseness, tighten as required	M

CAUTION: *Unplug power cord and disconnect air line prior to removing guards, funnels or covers. Preventive Maintenance must be performed by qualified maintenance personnel.*

6.3 Scheduled Maintenance Chart (perform every 500,000 cycles)

CHART

ITEM	DESCRIPTION	1	2	3	4	5	6	7	8	9	10
Drive belt (left panel)	Adjust/Inspect for wear replace when necessary	O	O	O	O	O	O	O	O	O	O
Heater element and wiring	Inspect for fraying, cuts, loose connections	O	O	O	O	O	O	O	O	O	O
Pressure bar Rubber strip	Clean, inspect for wear, replace if required	O	O	O	O	O	O	O	O	O	O
Guide rollers	Inspect for free movement	O	O	O	O	O	O	O	O	O	O
Roller bearings	Inspect for free movement	O	O	O	O	O	O	O	O	O	O
Perf sensor and spring	Inspect for wear, replace if necessary	O	O	O	O	O	O	O	O	O	O
Rubber drive roll	Inspect for cuts, unevenness	O	O	O	O	O	O	O	O	O	O
Steel upper roll	Clean with alcohol, inspect for burs	O	O	O	O	O	O	O	O	O	O
Printed circuit Boards / wiring	Blow off with clean, dry air, inspect for loose wires, connectors	O	O	O	O	O	O	O	O	O	O
Seal Cylinders	Listen for air leakage, replace or repair as required	O	O	O	O	O	O	O	O	O	O
Air blower filter	Inspect for contamination, replace as necessary	O	O	O	O	O	O	O	O	O	O
Air lines and connectors	Inspect for wear, cuts, leaking, replace as required	O	O	O	O	O	O	O	O	O	O
Print platen roller	Inspect for free movement, inspect for wear, replace roller or bearings as required	O	O	O	O	O	O	O	O	O	O
Print head belt	Inspect for tightness and wear, tighten, or replace as required	O	O	O	O	O	O	O	O	O	O
Print head	Clean, inspect for wear, inspect print quality (missing pixels), replace as required	O	O	O	O	O	O	O	O	O	O
	INITIALS										

Chapter 7

Trouble Shooting

7.1 Trouble Shooting Guide

The items included in this section cover the common causes of trouble which an operator might encounter during the operation of the T-300/T-375. When operating difficulties occur, the best procedure is to observe what is happening and attempt to isolate the problem. Make only one adjustment at a time, checking the results of each adjustment. If an adjustment does not help or escalates the problems, return the settings back to the former position.

CAUTION: These tests and repairs should be performed only by qualified mechanics or electricians.

7.2 Troubleshooting Checklist

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Touch Screen does not display	<ol style="list-style-type: none"> 1. Screen saver is active 2. Power off 3. Loose connection 4. Fuse blown 5. Cable shorted / failed 	<ol style="list-style-type: none"> 1. Touch the screen 2. Plug in power cord / turn on 3. Tighten connections 4. Replace fuse(s) 5. Replace cable
No main power light	<ol style="list-style-type: none"> 1. Blown fuse 2. Bulb out 	<ol style="list-style-type: none"> 1. Replace fuse 2. Replace bulb
Pressure bar does not move when foot switch is operated	<ol style="list-style-type: none"> 1. Heat not up to temperature 2. Disconnected air line 3. Disconnected foot switch 4. Power off 5. Option enabled preventing foot switch operation. 6. Foot switch defective 	<ol style="list-style-type: none"> 1. Toggle to setup mode, attempt to cycle. Wait for temperature to increase. 2. Connect air line 3. Connect foot switch to rear panel 4. Turn on power 5. Turn off options 6. Replace foot switch
Pressure bar moves inward but retracts before sealing	<ol style="list-style-type: none"> 1. Antijam sensors improperly adjusted 2. Cylinder speed mismatch 3. Insufficient air pressure 4. Broken contact on antijam circuit 	<ol style="list-style-type: none"> 1. Adjust antijam 2. Adjust speed controls on seal cylinders 3. Increase air pressure 4. Check continuity across antijam circuit
Pressure bar presses against front plate but does not seal bag	<ol style="list-style-type: none"> 1. Seal time too low 2. Heat (temp.) too low 3. Heater cartridge bad 4. Insufficient air pressure 5. PTFE folded over or missing 	<ol style="list-style-type: none"> 1. Increase seal time setting 2. Increase temperature setting 3. Replace heater cartridge 4. Increase air pressure 5. Inspect or replace PTFE
Bag sticks to PTFE or pressure (rubber) bar	<ol style="list-style-type: none"> 1. Seal temp. too high 2. Seal time too high 3. PTFE in poor condition 4. Rubber is dirty / contaminated 5. No PTFE on rubber strip 	<ol style="list-style-type: none"> 1. Decrease temp in bag setup screen 2. Decrease seal time in bag setup screen 3. Turn / replace PTFE 4. Clean / replace pressure bar rubber 5. Add PTFE tape to rubber

<p>Bag does not tear off completely</p>	<ol style="list-style-type: none"> 1. Bag slipping through rollers 2. Compression pressure insufficient 3. Drive roller not reversing 4. Bag did not index properly 5. Seal rubber dirty / worn 	<ol style="list-style-type: none"> 1. Clean upper and lower rollers with alcohol to remove slip and dirt build-up 2. Adjust roller compression 3. Check tear off cylinder 4. Index another bag for test 5. Clean / replace rubber
<p>Two bags index from rollers</p>	<ol style="list-style-type: none"> 1. Bag is folded over 2. Perf sensor dirty / damaged 3. Perf sensitivity out of adjustment 4. Ungrounded perf sensor circuit 5. Seal point value too high 6. Feed distance too high 7. Zero perf function incorrectly set 	<ol style="list-style-type: none"> 1. Straighten bag, thread bags again 2. Clean / replace perf sensor 3. Adjust pot on High Voltage PCB 4. Attach grounding rod to roller 5. Change seal point setting 6. Set value to zero 7. Reset Zero Perf.
<p>Bag does not completely index</p>	<ol style="list-style-type: none"> 1. Perf is sensing hole in bag (vent) 2. Seal position setting too low 3. Zero perf function incorrectly set 	<ol style="list-style-type: none"> 1. Reposition bag left or right 2. Increase seal position setting 3. Reset Zero Perf.
<p>First bag after threading indexing multiple bags</p>	<ol style="list-style-type: none"> 1. Thread bags at proper seal position 2. Perf Sensor not sensing bag 3. Dirty / damaged sensor 4. Pot on High Voltage PCB out of adjustment 	<ol style="list-style-type: none"> 1. Pull bags through pinch rollers to proper seal point, then cycle machine again. 2. Clean / replace sensor 3. Adjust Pot
<p>Bags web breaking prematurely in machine</p>	<ol style="list-style-type: none"> 1. Improper web tension 2. Index speed too high 3. Improper threading / web contact 4. Bag roll side-plates bent inward 	<ol style="list-style-type: none"> 1. Adjust tension 2. Reduce speed setting 3. Rethread / remove obstructions 4. Repair / remove side-plates

7.3 110V Circuit

Circuit drawings are provided to assist in troubleshooting the functionality of the T-300 / T-375 and also the interface signaling with auxiliary infeed equipment. A circuit diagram of the 110V circuit is comprised of main power to the bagger, through the fuse, Corcom filter, motor controller, solid state relay, heater element, line out, and into the power supply printed circuit board. See Dwg T375-E1.

7.4 PLC IO LEDs

A Dwg is provided which illustrates the PLC LEDs along with wire colors / pin-outs. See Dwg T375-E2.

7.5 Analog Card, Temperature Controller, Heater Circuit

A circuit diagram of the Analog controller FPO-A21 with correct Dip switch settings is provided. With a Thermocouple input (TC), the analog card has built in PID and auto tuning functions with 16-bit resolution for very accurate temperature controls. See Dwg T375-E3.

7.6 Stepper Motor Circuit

A circuit diagram of the stepper motor controller is provided with correct Dip switch and Pot settings. See Dwg T375-E4.

7.7 H.V. PCB

APPI manufactures the printed circuit board for accurate and consistent perforation detection, for accurate bag positioning and registration. A circuit diagram is provided for this PCB. See Dwg T375-E5

7.8 Zebra 110PAX4 Interface PCB

The T-375 Incorporates a Zebra 110PAX4 Interface PCB to provide the status of the Zebra Main CPU and Print Head. Wiring and descriptions of IO is described on this drawing. See Dwg T375-E6.

7.9 Touch Screen Circuit

The T-300 / T-375 is equipped with a color touch screen. Wiring circuit is provided in this drawing. See Dwg T300-E7.

7.10 SAV Manifold Wiring Circuit

The T-300 / T-375 is equipped with individual solenoid valve mounted to a manifold. Valves 1 through 5 are standard. Additional solenoid valves may be added for optional equipment. See Dwg T300-E8.

7.11 PLC IO Listing

Main PLC and Expansion PLC IO (Inputs and Outputs) Listing is provided to assist in troubleshooting the T-300 / T-375.

Main PLC	Input	Description	Output	Description
	X0	Stepper Control	Y0	Stepper Motor Forward
	X1	Bag Out Sensor	Y1	Stepper Motor Reverse
	X2	Seal Bar Left Sensor	Y2	Perforation Activate
	X3	Perf Sensor	Y3	Heater Element
	X4	Seal Bar Right Sensor	Y4	Air Blower
	X5	CF-10 Photo Eye Sensor	Y5	Air Pulse
	X6	Htr Bar Left Sensor	Y6	Web Tension Cylinder
	X7	Htr Bar Right Sensor	Y7	Seal Bar Cylinders
	X8	Foot Switch	Y8	H. V. 120V Activate
	X9	Guard Switch	Y9	Start Print (T-375)
	XA	Frame Open Sensor	YA	Spare
	XB	Label Downloaded	YB	Reprint (T-375)
	XC	Printer Error (T-375)	YC	Spare
	XD	End Print (T-375)	YD	Spare
	XE	Ribbon Out sensor	YE	Aux Output
	XF	Aux Input	YF	Print Head Cylinder (T-375)
Expansion PLC	X20	Spare	Y20	Spare
	X21	Spare	Y21	Spare
	X22	Spare	Y22	Spare
	X23	Spare	Y23	Spare
	X24	Spare	Y24	Spare
	X25	Spare	Y25	Spare
	X26	Spare	Y26	Spare
	X27	Spare	Y27	Spare
	X28-X2F	Spare	Y28-Y2F	Spare

